

We claim:

1. A DNA construct for expression of multiple gene products in a cell comprising:

- 5/10/01
- a) a single promoter at the 5' end of the construct,
 - b) multiple genes encoding one or more proteins,
 - c) a first intein sequence fused to the portion of the gene encoding the carboxy-terminus of a first encoded protein,
 - d) a second intein sequence fused to the portion of the gene encoding the carboxy-terminus of a second encoded protein, and
 - e) transcription termination sequences,
- wherein at least the first intein sequence can catalyze excision of the exteins.

2. The construct of claim 1 for expression in a eucaryotic cell wherein the transcription termination sequences comprises a polyadenylation signal at the 3' end of the construct.

3. The construct of claim 1 where the cell is a bacterial or yeast cell and the promoter is a promoter operable in the microbial cell.

4. The construct of claim 1 wherein the cell is a plant cell and the promoter is a promoter operable in a plant cell.

5. The construct of claim 1 wherein the cell is a mammalian cell and the promoter is operable in a mammalian cell.

6. The construct of claim 1 wherein the promoter is selected from the group consisting of inducible promoters, constitutive promoters and tissue specific promoters.

7. The construct of claim 1 wherein the genes encoding one or more proteins are preceded or followed by a sequence encoding a peptide that targets the gene expression product to a particular compartment within the cell in which the construct is expressed.

8. The construct of claim 1 wherein the proteins are different enzymes.

9. The construct of claim 1 wherein the proteins are the same proteins.

10. The construct of claim 1 wherein the inteins prevent the ligation reactions normally associated with protein splicing.

11. The construct of claim 10 wherein one or more inteins comprise exteins and the first residue of the 3'-terminal extein is engineered to contain a glycine or alanine.

12. The construct of claim 4 wherein the proteins are selected from the group consisting of acyl CoA dehydrogenases), acyl CoA oxidases, catalases, alpha subunits of beta-oxidation, beta subunits of beta-oxidation, PHA synthases with medium chain length substrate specificity, beta-ketothiolases, NADH or NADPH dependent reductases, PHA synthases with short chain length specificity, and PHA synthases that incorporate both short and medium chain length substrates.

13. The construct of claim 4 wherein the proteins are selected from the group consisting of enzymes encoded by the phaG locus, medium chain length synthases, beta-ketothiolases, NADH or NADPH dependent reductases, and PHA synthases that incorporate both short and medium chain length substrates.

14. The construct of claim 4 wherein the proteins are selected from the group consisting of herbicide resistance, insect resistance, and desirable plant crop traits.

15. A method for expressing multiple genes in cells comprising transforming the cells with a DNA construct comprising:

- a) a single promoter at the 5' end of the construct,
 - b) multiple genes encoding one or more proteins,
 - c) a first intein sequence fused to the portion of the gene encoding the carboxy-terminus of a first encoded protein,
 - d) a second intein sequence fused to the portion of the gene encoding the carboxy-terminus of a second encoded protein, and
 - e) transcription termination sequences,
- wherein at least the first intein sequence can catalyze excision of the exteins.

16. The method of claim 15 for expression in a eucaryotic cell wherein the transcription termination sequences comprises a polyadenylation signal at the 3' end of the construct.

17. The method of claim 15 where the cell is a bacterial or yeast cell and the promoter is a promoter operable in the microbial cell.

18. The method of claim 15 wherein the cell is a plant cell and the promoter is a promoter operable in a plant cell.

19. The method of claim 15 wherein the cell is a mammalian cell and the promoter is operable in a mammalian cell.

Sw 20. The method of claim 15 wherein the promoter is selected from the group
a4 consisting of inducible promoters, constitutive promoters and tissue specific promoters.

21. The method of claim 15 wherein the genes encoding one or more proteins are preceded or followed by a sequence encoding a peptide that targets the gene expression product to a particular compartment within the cell in which the construct is expressed.

22. The method of claim 15 wherein the proteins are different enzymes.

23. The method of claim 15 wherein the proteins are the same proteins.

24. The method of claim 15 wherein the inteins prevent the ligation reactions normally associated with protein splicing.

25. The method of claim 24 wherein one or more inteins comprise exteins and the first residue of the 3'-terminal extein is engineered to contain a glycine or alanine.

26. The method of claim 18 for making polyhydroxyalkanoates in plants wherein the proteins are selected from the group consisting of acyl CoA dehydrogenases), acyl CoA oxidases, catalases, alpha subunits of beta-oxidation, beta subunits of beta-oxidation, PHA synthases with medium chain length substrate specificity, beta-ketothiolases, NADH or NADPH dependent reductases, PHA synthases with short chain length specificity, and PHA synthases that incorporate both short and medium chain length substrates.

27. The method of claim 18 for making polyhydroxyalkanoates in plants wherein the proteins are selected from the group consisting of enzymes encoded by the phaG locus, medium chain length synthases, beta-ketothiolases, NADH or NADPH dependent reductases, and PHA synthases that incorporate both short and medium chain length substrates.

28. The construct of claim 18 wherein the proteins are selected from the group consisting of herbicide resistance, insect resistance, and desirable plant crop traits.